

APPENDIX A:

Analysis of Tidal Shoreline Segments in Fairfax County: Erosion Conditions and Erosion Controls

Shoreline segments are defined based on watersheds; watershed boundaries in tidal areas are shown in Figures 27, 28, 29, 31, and 32.

1979 shoreline erosion citations have been taken from the Shoreline Situation Report: Counties of Fairfax and Arlington and the City of Alexandria, Virginia Institute of Marine Science, 1979.

2002-3 shoreline erosion, accretion/sedimentation, and shoreline structure information is based on reviews of aerial photography by the Fairfax County Department of Planning and Zoning.

Cameron Run Tidal Shoreline Watershed Segment

Primary Waterways: Cameron Run and Hunting Creek

Adjacent existing land uses – vacant land, retail, industrial, office, public open space/recreation, government/institutional, multi-family residential

Fetch: no significant fetch

Soils: Lunt-Hilly and Steep land, loamy and gravelly sediments-Beltsville association (19)

Shoreline Erosion 2002-2003 (% of Fairfax County total tidal shoreline): none identified

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 2

Other Shoreline Structures – access, etc. 2002-2003: 0

Accretion/Sedimentation 2002-2003 (% of Fairfax County total tidal shoreline): .4%

Belle Haven Tidal Shoreline Watershed Segment

Primary Waterways: Hunting Creek, Potomac River

Adjacent existing land uses: multi-family residential, retail, public open space/recreation

Fetch: no significant fetch

Soils: Lunt-Hilly and Steep land, loamy and gravelly sediments-Beltsville (19)

Shoreline Erosion 2002-2003 (% of Fairfax County total tidal shoreline): .06% – one occurrence cited along the George Washington Memorial Parkway

Shoreline Erosion 1979: no occurrences cited

Shoreline Erosion Control Structures 2002-2003: 12

Other Shoreline Structures – access, etc. 2002-2003: 2

Accretion/Sedimentation 2002-2003: none identified

Little Hunting Creek Tidal Shoreline Watershed Segment

Primary Waterways: Little Hunting Creek and the Potomac River

Adjacent existing land uses: public open space/recreation, single-family residential, government/institutional, vacant land, private open space/recreation

Fetch: no significant fetch occurs within the creek; however, Sheridan Point is exposed to open Potomac River with a fetch caused by winds out of the WSW at 3.8 nautical miles

Soils: Matapeake- Mattapex-Woodston (20)

Shoreline Erosion 2002-2003 (% of total Fairfax County tidal shoreline): .94% – Within the creek, no erosion was identified; two separate occurrences of erosion were identified at the mouth of the creek on both the east and on the west sides. Two separate occurrences of erosion were identified on either side of Sheridan Point; two additional occurrences of erosion were identified traversing north along the Potomac River. All the occurrences of erosion were located along the National Park Service Property of the George Washington Memorial Parkway.

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 99

Other Shoreline Structures – access, etc. 2002-2003: 110

Accretion/Sedimentation 2002-2003: none identified

Dogue Creek Tidal Shoreline Watershed Segment

Primary Waterways: Dogue Creek, Gunston Cove (north shore), Accotink Bay (east shore), Potomac River

Adjacent existing land uses: single-family residential, vacant land, retail, government/institutional

Fetch: there is not significant fetch within the creek; however, at Ferry Point, which is on the north shore at the mouth of the creek, fetch is caused by winds from the SW at 3 nautical miles; and the fetch at the south bank of the mouth of Dogue Creek is caused by prevailing winds from ENE over 4.1 nautical miles; at the north shore of Gunston Cove the fetch at Whitestone Point is caused by winds out of the SSE at 3.0 nautical miles

Soils: Matapeake- Mattapex-Woodston (20); Hilly and Steep land, loamy and gravelly sediments-Woodstown-Matapeake (21); Beltsville-Elkton-Sassafras (23)

Shoreline Erosion 2002-2003 (% of total Fairfax County tidal shoreline): 1.1% –north shore of Gunston Cove east of Whitestone Point, Fort Belvoir–erosion identified; two other segments of shoreline on the south bank of Dogue Creek–erosion identified; erosion identified immediately east of Ferry Point

Shoreline Erosion 1979: north shore of Gunston Cove east of Whitestone Point, Fort Belvoir – moderate erosion cited; moderate erosion cited immediately east of Ferry Point

Shoreline Erosion Control Structures 2002-2003: 76

Other Shoreline Structures – access, etc. 2002-2003: 72

Accretion/Sedimentation 2002-2003 (% of total Fairfax County tidal shoreline): .7% – small amount identified at the head of the creek south of Route 1

Accotink Creek Tidal Shoreline Watershed Segment

Primary Waterways: Accotink Bay, Gunston Cove

Adjacent existing land use: government/institutional

Fetch: no significant fetch within Accotink Bay

Soils: Hilly and Steep land, loamy and gravelly sediments-Woodstown-Matapeake (21)

Shoreline Erosion 2002-2003 (% of total Fairfax County tidal shoreline): none identified

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 0

Other Shoreline Structures – access, etc. 2002-2003: 0

Accretion/Sedimentation 2002-2003: none cited

Pohick Creek Tidal Shoreline Watershed Segment

Primary Waterways: Pohick Bay, Gunston Cove

Adjacent existing land uses: government/institutional, public open space/recreation, vacant land

Fetch: Pohick Bay – no significant fetch, however, significant fetch is caused by winds out of NW at 8 nautical miles along the south shoreline of Gunston Cove

Soils: Hilly and Steep land, loamy and gravelly sediments-Woodstown-Matapeake (21)

Shoreline Erosion 2002-2003 (% of total tidal shoreline): none identified

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 0

Other Shoreline Structures – access, etc. 2002-2003: 0

Accretion/Sedimentation 2002-2003: none identified

High Point Tidal Shoreline Watershed Segment

Primary Waterways: Belmont Bay, Occoquan Bay, Potomac River and Gunston Cove

Adjacent existing land uses: low density single-family residential, vacant land, public open space/recreation, private open space/recreation,

Fetch:

- South shore of Belmont Bay to Sandy Point- no significant fetch affects this shoreline;
- Sandy Point to High Point: shoreline is NNW- SSE – winds blowing out of the SSW approach Sandy Point at 4.8 nautical miles and the winds blowing out of the southwest approach High Point over 11.5 nautical miles;
- The shoreline reach from High Point to Hallowing Point with Sycamore Point situated midway in the reach is affected by a fetch of 6.8 nautical miles from winds out of WSW; and
- Southern shore, mouth of Gunston Cove- winds approach the shoreline from the NW over 8 nautical miles.

Soils: Mattapeake- Mattapex-Woodston (20); Hilly, steep, land, loamy gravelly sediments; Woodston-Mattapeake (21)

Shoreline Erosion 2002-2003 (% of total Fairfax County tidal shoreline): 1.9%

- Sandy Point to High Point: several occurrences of erosion identified
- High Point to Sycamore Point: erosion identified throughout the entire reach
- Sycamore Point to Hallowing Point: none identified
- Southern shore, mouth of Gunston Cove: several instances of erosion identified

Shoreline Erosion 1979:

- Sandy Point to High Point: several occurrences of moderate erosion cited
- High Point to Sycamore Point: moderate erosion cited throughout the entire reach
- Sycamore Point to Hallowing Point: none cited
- Southern shore, mouth of Gunston Cove: several instances of moderate erosion cited

Shoreline Erosion Control Structures 2002-2003: 95

Other Shoreline Structures – access, etc. 2002-2003: 61

Accretion/Sedimentation 2002-2003: none identified

Kanes Creek Tidal Shoreline Watershed Segment

Primary waterway: Belmont Bay

Adjacent existing land uses: public open space/recreation, low density single-family residential, single-family residential, vacant land, private open space/recreation

Fetch: not significant

Soils: Hilly and Steep land, loamy and gravelly sediments-Woodstown-Matapeake (21)

Shoreline Erosion 2002-2003 (% of total Fairfax County tidal shoreline): .5%

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 11

Other Shoreline Structures – access, etc. 2002-2003: 10

Accretion/Sedimentation 2002-2003: none identified

Mill Branch Tidal Shoreline Watershed Segment

Primary waterways: Massey Creek and Occoquan River

Adjacent existing land uses: low density single-family residential, single-family residential, multi-family residential, public open space/recreation, private open space/recreation, vacant land, industrial

Fetch: not significant

Soils: *east of I-95* - Lunt-Hilly and Steep land, loamy and gravelly sediments-Beltsville association (19), Matapeake- Mattapex-Woodston (20), Hilly and Steep land, loamy and gravelly sediments-Woodstown-Matapeake (21); *west of 95* – Rowland-Bermudian-Bowmansville (1), Appling-Louisburg-Colfax (7)

Shoreline Erosion 2002-2003: none identified

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 27

Other Shoreline Structures – access, etc. 2002-2003: 32

Accretion/Sedimentation 2002-2003: none identified

Occoquan Tidal Shoreline Watershed Segment

Primary Waterway: Occoquan River

Adjacent existing land use: government/institutional, vacant land, public open space/recreational

Fetch: no significant fetch in the Occoquan River

Soils: Appling-Louisburg-Colfax (7)

Shoreline Erosion 2002-2003: none identified

Shoreline Erosion 1979: none cited

Shoreline Erosion Control Structures 2002-2003: 3

Other Shoreline Structures – access, etc. 2002-2003: 1

Accretion/Sedimentation 2002-2003: none identified